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An Essay
on
Variola

Respectfully submitted
to the faculty
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This is one of the eruptive diseases enumerated among the diseases classed as fevers. It is supposed by some to have been introduced first into Europe and Asia at a period during the middle ages: and by others of as good authority that the first description of this disease is found in the works of the Arabians, and supposed to have originated in Africa. Rehaz describes this disease as existing there in the 10th century. Small pox is distinguished into classes. distinct and confluent small pox. Distinct when the pustules are even distinct

and separated from each other leaving an intervening red space; and confluent where they coalesce forming a continuous whole or confluent and irregular. the intervening red spaces being pale.

As I have stated it is classed into two varieties. yet Hartmann and other authors of the best authority give us a distinction of thirteen varieties. I will not recurr at ~~these~~ these varieties. They only serve to perplex and mislead the mind of the young student whilst a more simple classification gives us at one glance the varieties sufficiently accurate for the treatment of the disease.

This loathsome disease sets in suddenly with chilliness followed by hot dry skin. hard quick pulse. pain

in the epigastrium and small of the back: headache nausea and vomiting and sometimes delirium

The precursory stage of this disease continues with increasing fever every evening for two or three days. but may last longer in persons of delicate constitutions

The eruption first appears on the face and neck. afterwards on the back chest and upper extremities: it makes its appearance on the third or fourth day as a small inflamed red stigma or lump distinguishing this eruption from all other exanthemata: Although

there are objections to this as a specified rule especially that of the confluent form: as in this the eruption generally comes out earlier and more confusedly:

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the pimplles being so minute and crowded together it forms a redness of the whole surface which is hardly distinguishable from scarlet fever or erysipelas.

Cases almost without number have been cited where doubts have been entertained during the first appearance of this eruption and still our most eminent and observing men are struck by the similarity between measles and small pox and cannot with certainty decide until the third day of the appearance when the pustules begin to contain a little fluid and a depression in the centre of them is beginning to be seen growing dark as the disease progresses.

When small pox pustules are fully formed they cannot be mistaken for any other

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disease: the pustules gradually ripen and generally on the eighth day begin to burst and discharge a yellow purulent matter which dries forming crusts and scabs: or shrivels and dries up changing from a yellow to a brown or blackish color: and especially to the latter on the feet: though in the confluent form the pustules are rarely if ever of the same yellow color being at first of a whitish and then of a brown color and sometimes of a bluish or purplish hue

In many cases the pustules form in the face before the stigmata make their appearance on the feet: owing to the eruption first making its appearance on the face and on the feet last: and each pock has its stage of incubation to run

which lasts generally twelve days: sometimes however from eight to fourteen days.

On or about the twelfth day the scabs and crusts begin to fall off: unless the pustules were prematurely broken by mechanical means, as by scratching ~~and~~ when they will crust and fall off earlier. The severity of this disease is generally in proportion to the extent of the eruption. If there be but a few pustules in a given case "variola discreta" there will not be so much of the surface covered and the inflammation must necessarily be less than in "variola confluenta" when the pustules numbering many thousands cover the surface almost wholly thus frequently causing exsiccation. And again the number of pustules indicate the

amount of variolous poison in the system thus giving to the confluent form more danger by having many times more poison in the blood

The face is swollen and often to so great a degree that the eyelids are closed and the face appears like a solid cake of pustula infection

When the scabs or crusts fall off it leaves the skin of a deep red or purplish hue which in the course of weeks fades to a natural and healthy color leaving a depression or pit which ever after exists.

On the coming out of ~~out of~~ the eruption the fever subsides as also the pain in the limbs back and head and come on again on the seventh day of the eruption

But it only lasts a day or two and re-
-occurs on the twelfth. This is very
light in the distinct form, but in the
confluent it is very severe and danger-
ous.

According to Dr. Gregory
one sixth of all such cases die on the
eleventh day. His statistics are as fol-
lows. Out of 168 cases, 27 died on the
eighth day of the eruption.

32 died in the first week

99 second ..

21 third ..

thus making the second week prove
the most fatal; and in the third
owing to the later appearance of the
eruption the patient gradually sinks
from the large amount of suppura-
tive inflammation and irritation

of the surface. Or complicated with it may be typhoid, gastric and other symptoms which tend to make this dreadfull disease more fatal.

Although I have given a description of the disease and its progress to a termination, yet no two cases are alike and every patient has his peculiar type of difference in some one or all the different stages of the disease.

But it will be well here to speak particularly of the typhoid and putrid form of this disease as being the most and most dangerous.

When there is great redness and inflammation of the skin accompanied with debility, delirium, pain in the back, loins &c we may anticipate

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a severe attack and suspect the typhoid form: which if not checked will suddenly bring on the putrid character: this may be known by the dark color of the pus-tule as it advances toward suppuration: the contents being dark blood or bloody matter instead of white matter or yellow pus. This is owing to a decomposition of the blood by its containing an excess of the various poisons: and is very dangerous and more especially if collapse sets in and the patient sinks seemingly without life and animation.

There is no disease so contagious as small pox: and it is affected that no one liable to the small pox can associate in a room with a patient ^{ill} of this

disease without receiving the infection.
I differ from this opinion.

It may be communicated in a number of ways: by breathing the atmosphere contaminated with this disease. handling clothing: by inoculation &c.

It is supposed by some authors that small pustules occur upon the mucous membrane of the intestinal canal. others disbelieve or do not credit the idea asserting that the small pustule cannot exist upon any mucous membrane where there is a continual moisture which is not freely exposed to the air. For instance pustules do not form on the inner side of the eyelid except in cases

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of ectropium: only on that portion
of the glans penis which is not cov-
ered by the prepuce and only on that
portion of the anus which protrudes
in ~~hermaphrodites~~, and some have
even denied their existence upon
the fetus in utero. But here
they are most certainly mistaken.
In almost numberless cases where
pregnant women have taken the
disease it has caused abortion, and in
severe cases death to the mother.
Cases have been noted where the child
at birth was covered with pustules,
and others where the pits and scars
remained to be seen at birth.

Several cases are on record where women
who had had the small pox became

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pregnant. nursed a patient in
the disease and gave birth in due
time ~~recovering~~ to a full grown healthy
child well marked with the pocks of
small pox. without the least incon-
venience to the mother; she not
even mistaking that this loathsome
disease could be within. preying upon
the little frame of that living form
yet unborn. And what a blessing
it is in such a case that the mother
should be kept ignorant of the fact:
her own body being as she believes
proof against the disease. she will of
course keep up good spirits and en-
joy health while the little sufferer
within its closet home could it be
seen would present a frightfull as-

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speed and cause an immediate change in the mother's feelings to the imminent peril of both mother and child: but as long as she is kept ignorant of the change within, she can but expect and is well assured that all is well and looks forward with the same bright hopes, congratulating herself that she has passed thus far without the least inconvenience from any source.

But why should it not have caused abortion in this case as well as in those where the mother is having the disease? Simply because the child is receiving nourishment from the body of a healthy mother: a double healthy action counteracting the one principle ^{of} disease has a tendency to overpower the disease.

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and continue the healthy action. -
Several such cases as above mentioned
have been inoculated without effect;
this also being a fair proof that the small
pox pustule may form upon the fetus
in utero and pass through the stages
of suppuration and desquamation; thereby
breaking down all the arguments used
to convince us that such a thing could
never be. Thus showing that this
rule is not strictly true "that where
there is a continual moisture or the air
is not frequently admitted on a mucous
membrane there can be no small pox
pustules." And yet they say the enlarged
pustules put on very much the same
appearance of pustules and also cite a case
where the pustules at full height were

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discovered as low down the trachea as
the third ring: and in many cases
where suppuration has followed the
eruption by affecting the air passages.
One might argue that this was from the
inflammation of the mucous membrane
caused by inhaling the contaminated at-
mosphere; but why not a suppuration
since air is a frequent visitor to the parts;
but then again it is proved that air is not
necessarily wanted to form a pustule since
the fetus in utero may pass through the
whole stages of this disease and come into
the world proving to us its security against
the disease: And that the pustule can-
not exist on a mucous membrane where
there is a continual moisture is not
true. For the same reason that

they are found on the fingers and in
almost every case especially of the confluent
-ers, we see pustules on the mucous
membrane of the lips cheeks and throat.
Among the many accompanying dis-
-eases and complications we find ery-
-sipelatous inflammation, glandular swellings
in the groins and axilla sometimes going
on to suppuration: sores on the hips and
scrotum, and in some cases the large
puncts after death have been found to
be full of matter: Abscesses are sometimes
formed: and as I have before mentioned
inflammation of the air passage causing
in sever cases of the confluent form
suffocation. Diarrhoea if allowed to run
to excess and cause too much depletion is
considered a dangerous symptom -

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In some cases of small pox during the suppurative stage we may see numerous fresh vesicles starting up on the parts which have not been occupied by the pustule, when this occurs it is considered as unfavorable: also when a chill occurs during the suppurative stage: sometimes a collapse will occur during the first stage of the eruption: the pop-
-illa flatten, lose their bright color and the extremities of the patient appear cold

When this happens active treatment should be had recourse to as it generally proves fatal.
Small pox is most dangerous when it occurs in persons of plethoric unfeblest and scrofulous constitution and especially when it takes on the typhoid and putrid char-
-acter. Wat^{son} says hemorrhage from the uterus is not uncommon.

Among the sequels of this disease are blindness caused by ulcers ^{on the} cornea, the accumulation of pus between the lamellæ of the cornea &c.; deafness sometimes follows, also abscess and ^{also} ichorous ~~also~~ ulcers: many of which have been hard to cure; and as I have said before pus has been found in the joints and sockets of some of the larger bones. Caries, ankylosis and necrosis may likewise occur, but these latter have seldom been found to exist. Menstrual conditions, epilepsy, ~~idiosyncrasy~~ &c. may follow. On the other hand many other affections are effaced and many malignant diseases are averted by taking this disease. Inoculation has long been known to bring on the small pox in a lighter form than when taken by the natural way (ie)

by inhaling the contaminated atmosphere
and the duration is much shorter.

Why it should be so I do not know un-
less it is considered the quantity introdu-
ced under the cuticle is much less than when
the contaminated atmosphere is breathed
exposing a greater extent of surface (and that
too of mucous surface) to the poisonous influ-
ence of the miasm. And if this be the
case why does it come to maturity sooner and
not in any way so dangerous: simply be-
cause the particle introduced beneath the
cuticle comes quickly in contact with the
healthy blood which carries it on on its course
through the system to be ejected and thrown
out as soon as possible: and not as in the
natural way carried through a mucous mem-
brane to wind its way as a canker laying

hold of the system with renewing strength
the slower it progresses. This doctrine
holds good in nearly all the exanthemata.
all practitioners agree that they had rather see
the eruption and fever quite violent at first
than backward and slow in their develop-
ment in any of these diseases.

The source from whence the practice came
cannot be ascertained. though it is said to
have been practiced in India "time out of
mind" and was certainly practiced in Turkey
during the last century.

It is estimated one out of six hundred
die from this disease while one out of five
die from the disease taken in the natural
way.

In 1713 it caused quite a
sensation in Adrianople and in 1718 it
was introduced into Great Britain where

its popularity spread so rapidly that in a few years thousands had been inoculated with the greatest success. One great objection to this practice is that it is as contagious as the natural small pox, and that the contagion produced is as severe, and is by some considered to be the small pox itself.

But this is now done away and a better and far more superior practice has taken its place: I allude to vaccination, or the introduction of the vaccine virus taken from the pustule formed on the cow known as cow pox virus. Dr. Jenner discovered that the pustule formed by the introduction of the cow pox virus on the skin was similar to that of small pox, and which being transmitted to others by subsequent vaccination produced the same

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effect. This practice was heralded with great applause through the country and in the course of six years was known in all parts of the world. The disease following vaccination (varioloid) is much lighter than the inoculated and a putreum, to the natural small pox.

Vaccination produces but one pustule which begins to be seen on the third day after the insertion of the virus into the arm as an inflamed pimple: on the fifth day the vesicle is plainly seen which continues to fill and enlarge to a quarter or half an inch in diameter: on the eighth day slight fever is manifested which soon subsides: after this a brown crust begins to form over the vesicle which continues growing harder till about the ~~two~~^{four} fifth day.

when the crust falls off leaving a cicatrix
slightly depressed with pits

Although Jenner thought at first he had
found a specific against smallpox he was
disappointed as he afterwards found that many
who had been vaccinated had taken the dis-
ease but in a modified form known as
varioloid. It is of itself contagious and
considered not dangerous. Yet patients have
died with this disease.

Vaccination is now practiced in all civ-
ilized countries and inoculation laid aside
except in urgent cases where vaccine virus
cannot be obtained and where a person
has been exposed to the smallpox; in
such a case only is inoculation expedient
or justifiable, for it not only transfers
a contagious disease and one that leaves its

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mark on the fair face. but it is a compar-
atively dangerous one

In some cases of this kind vaccination
will do as well and better if performed be-
fore the fifth day after exposure, modifying
the disease to varioloid